

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

JUL 25 2002

CC Docket 94-102

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

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**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Revision of the Commission's Rules	)	CC Docket 94-102
To Ensure Compatibility with	)	
Enhanced 911 Emergency	)	
Calling Systems	)	

**AT&T WIRELESS SERVICES, INC.  
STATEMENT OF ADDITIONAL INFORMATION UNDER SECTION 1.65(a)**

AT&T Wireless Services, Inc. ("AWS"), pursuant to section 1.65(a) of the Commission's rules, 47 C.F.R. § 1.65(a), hereby submits additional information regarding the status of the E911 Phase II implementation plan approved in AWS' E911 Phase II waiver order for its GSM network<sup>1/</sup> and the additional milestones AWS offered in its Limited Modification Request.<sup>2/</sup>

**INTRODUCTION AND SUMMARY**

As a result of information obtained from vendors and preliminary tests of E-OTD technology in AWS' commercial network, AWS has learned that it will be unable to meet the network equipment deployment milestones AWS offered in its Limited Modification Request. Also, while AWS' vendors are optimistic that the combination of E-OTD handsets and related network hardware and software, once fully deployed, will meet the 100/300 meter accuracy standard that applies this year under the AWS GSM Waiver Order, the vendors are still developing a technology path with a goal of achieving the 50/150 meter requirement that will

<sup>1/</sup> Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, Order, FCC 01-294 (rel. Oct. 12, 2001) ("AWS GSM Waiver Order").

<sup>2/</sup> See AT&T Wireless Services, Inc. Request for Limited Modification of E911 Phase II Waiver at 13 (filed February 1, 2002) ("Limited Modification Request").

apply in October 2003. Nevertheless, AWS has achieved the first chronological milestone it proposed in its Limited Modification Request -- AWS has begun offering one E-OTD capable handset -- and targets to achieve 95 percent penetration of E-OTD capable handsets among its GSM subscribers by December 31, 2004, a full year earlier than currently required under the Phase II rules.

## DISCUSSION

### I. Background

On October 12, 2001, the Commission granted AWS a waiver of its Phase II E911 rules to permit AWS to deploy E-OTD technology for its GSM network.<sup>3/</sup> In the AWS GSM Waiver Order, the Commission required AWS to ensure that its E-OTD-capable handsets sold and activated as of October 1, 2001 provide ALI with an accuracy of 100 meters for 67 percent of calls and 300 meters for 95 percent of calls,<sup>4/</sup> and its E-OTD-capable handsets sold and activated on or after October 1, 2003 provide ALI with an accuracy of 50 meters for 67 percent of calls and 150 meters for 95 percent of calls.<sup>5/</sup> These accuracy milestones mirror those required of other wireless carriers using E-OTD for their GSM networks.<sup>6/</sup>

Unlike the waivers granted to those other carriers, however, AWS' waiver did not include deadlines by which AWS was required to begin selling E-OTD capable handsets or providing

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<sup>3/</sup> AWS GSM Waiver Order at ¶ 27.

<sup>4/</sup> Id. at ¶ 28.

<sup>5/</sup> Id.

<sup>6/</sup> Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, Fourth Memorandum Opinion and Order, 15 FCC Rcd 17442, ¶¶ 63-64 (rel. Sept. 8, 2000) ("Fourth MO&O"); Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, Request for Waiver by Cingular Wireless LLC, CC Docket No. 94-102, Order, FCC 01-296, ¶¶ 29-30 (rel. Oct. 12, 2001) ("Cingular GSM Waiver Order").

Phase II services to PSAPs.<sup>7/</sup> The absence of such deadlines reflected AWS' representations in its initial waiver request that it was "working with handset vendors so that it can provide E-OTD-compatible handsets to GSM customers when AT&T's GSM network comes online" and "working with its infrastructure vendors to require contractually that the GSM infrastructure be E-OTD equipped when installed."<sup>8/</sup> Based on AWS' requests to its vendors and their responses, AWS' reasonable expectation during the pendency of the GSM waiver application was that the necessary handsets and network equipment would be available when it was ready to turn up its GSM network. Despite AWS' best efforts to ensure that this occurred, however, vendors were not ready to deliver the required handsets and other E-OTD equipment when AWS launched commercial GSM service in four markets on October 2, 2001.<sup>9/</sup>

AWS therefore began gathering information regarding the actual date that compliant handsets and network equipment would be available from vendors and developing a plan for a modified waiver request that would reflect these new vendor commitments, so it would have a complete solution to present to the Commission. On February 1, 2002, AWS filed a request for limited modification of its GSM waiver.<sup>10/</sup> In its Limited Modification Request, AWS asked that its GSM waiver be modified to require AWS to: (1) address the legacy base of non-E-OTD-capable handsets by deploying a network software solution ("NSS") by December 31, 2002, without regard to a PSAP request; (2) deploy E-OTD technology in its GSM network by December 31, 2002 for all valid PSAP requests pending as of June 30, 2002; (3) implement all

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<sup>7/</sup> Fourth MO&O at ¶¶ 62, 65-66; Cingular GSM Waiver Order at ¶¶ 28, 31.

<sup>8/</sup> See AT&T Wireless Services, Inc. Request for Waiver of the E911 Phase II Location Technology Implementation Rules at 5, CC Docket No. 94-102 (filed April 4, 2001). See also AWS GSM Waiver Order at ¶ 16.

<sup>9/</sup> See Limited Modification Request at 2-3.

<sup>10/</sup> See id.

valid PSAP requests received after June 30, 2002 within six months, as required under the Commission's Phase II E911 rules; (4) offer at least one E-OTD-capable GSM handset for sale by September 1, 2002; (5) ensure that 50 percent of all new GSM handsets sold and activated are E-OTD-capable by February 28, 2003; and (6) ensure that 100 percent of new GSM handsets sold and activated are E-OTD-capable by June 30, 2003. AWS also stated that it planned to achieve 95 percent penetration of E-OTD-capable handsets among GSM subscribers by December 31, 2004, a full year earlier than currently required under the Phase II rules.

## **II. Progress Since February 2002**

Since filing its Limited Modification Request, AWS has continued to move forward as quickly as possible with implementation of E-OTD. AWS has achieved the first chronological milestone that it proposed in its Limited Modification Request by offering one E-OTD capable handset for sale to its customers.<sup>11/</sup> AWS also is on track to achieve, earlier than expected, the second milestone it proposed in its Limited Modification Request, i.e., ensuring that 50 percent of all new GSM handsets sold and activated are E-OTD-capable by February 28, 2003. AWS has received several additional E-OTD-capable handset models from its vendors. If lab and field tests are satisfactory, AWS expects to begin selling these handsets during the Fall of this year.

With respect to network equipment and software, AWS began its First Office Application ("FOA") testing<sup>12/</sup> of Ericsson's E-OTD equipment on its 1900 MHz network in Dallas, Texas in May and on its 850 MHz network in Denton, Texas in June. AWS also began FOA testing of Nokia's E-OTD equipment on its 1900 MHz network in Portland, Oregon and on its 850 MHz network in Sand Point, Idaho in June. Each FOA is being performed on a live GSM network that

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<sup>11/</sup> E-OTD capability has been verified to the extent possible with existing E-OTD FOAs.

<sup>12/</sup> Before any new technology can be deployed on a national basis, AWS must first conduct a FOA of that technology in at least one market. Assuming no extraordinary problems arise during a FOA, nationwide deployment of the technology can then begin.

serves actual customers using production-grade E-OTD hardware and software. As a result, these are not “experimental trials” of E-OTD technology, but rather first implementations of production handsets and network equipment, as a precursor to deployment of E-OTD location technology in fully functional commercial wireless networks that are connected to PSAP E911 networks.

AWS has divided its FOAs into three parts. During Part 1, from May 2002 to August 2002, AWS and its vendors are evaluating the stability, functionality, and interoperability of E-OTD network elements and handsets, as well as NSS functionality. For Part 1, AWS is using 19 cell sites in Dallas, 29 cell sites in Portland, and a more limited number of cell sites in Denton and Sand Point. As AWS explained in its Limited Modification Request,<sup>13/</sup> deploying E-OTD technology is a technically complicated process during which all the components of both the handsets and the network infrastructure must work together seamlessly. The challenges of deploying E-OTD are compounded for AWS because it uses multiple handset and network equipment vendors, whose E-OTD hardware and software must be compatible in order to ensure seamless E-OTD service. Accordingly, during Part 1 of its FOAs, AWS is verifying the interoperability of network elements from different vendors. Such efforts include testing the Nokia and Ericsson radio access networks with the Nortel Gateway Mobile Location Center (“GMLC”),<sup>14/</sup> as well as verifying the interoperability of E-OTD-capable handsets from various vendors, including Nokia, Sony-Ericsson, Motorola, and Siemens, with those network elements.

Preliminary results of Part 1 of AWS’ FOAs indicate that E-OTD can work in the multi-vendor environment of AWS’ GSM network under real-world conditions. Handsets and network

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<sup>13/</sup> See Limited Modification Request at 6-10.

<sup>14/</sup> The GMLC is a new network element that provides the interface between AWS’ network and the PSAP’s network. The GMLC triggers the initial positional request and then provides the calculated latitude/longitude information to the PSAP.

elements are operating together and returning location information to the GMLC. The preliminary information AWS has received from its vendors indicates that E-OTD will be a stable location platform that will be capable of meeting the Commission's 100/300 meter accuracy standard. Based on the limited results of the FOAs to date, however, it remains too early to determine whether E-OTD will meet the 100/300 standard on AWS' GSM network prior to December 31, 2002.

During Part 2 of the FOAs, which are scheduled to take place from August 2002 to September 2002, AWS and its vendors will expand the geographic scope of the FOAs as well as the variety of radiofrequency ("RF") and topographical environments covered. AWS currently is in the process of expanding the Dallas and Portland FOA areas, each of which will have approximately 100 Location Measurement Units ("LMUs") in operation.<sup>15/</sup> This expanded scope will allow AWS and its vendors to test larger-scale deployments of E-OTD technology, as well as wider-area tuning and operation. AWS and its vendors also will conduct preliminary tests of location accuracy in various RF environments using various handsets.

During Part 3, which is planned for October 2002 to November 2002, AWS and its vendors will continue to expand the geographic coverage of the Dallas and Portland FOAs. AWS eventually plans to deploy approximately 400 cell sites in Dallas and 300 cell sites in Portland by the conclusion of Part 3. The expanded scope of the FOAs will allow AWS and its vendors to test location accuracy over a market-wide area and address market-wide tuning, operation, and maintenance issues. AWS also plans to integrate its E-OTD location network with an active PSAP E911 network during Part 3 in order to verify the end-to-end delivery of location information.

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<sup>15/</sup> The LMU is a small receiver that must be installed at each cell site to measure the relative time differences between network elements.



### III. New Developments

**Network Equipment Deployment Issues.** As a result of information received from its vendors and experience gained through its FOAs, AWS believes that it will not meet the network equipment deployment milestones set forth in its pending Limited Modification Request, i.e., to deploy E-OTD technology by December 31, 2002 for all valid PSAP requests pending as of June 30, 2002, and implement all valid PSAP requests received after June 30, 2002 within six months.<sup>16/</sup> The anticipated delay is primarily due to a lag in receiving specifications from vendors for the placement of E-OTD antennas. In May, AWS asked its two base station vendors, Ericsson Inc. and Nokia Inc., to deliver these specifications by June 15 for certain markets for which AWS had received valid PSAP requests for E911 Phase II service, and by July 1 for the remaining markets for which such requests were pending. However, as of the date of this filing, AWS has received antenna placement specifications for only approximately twenty percent of the sites where E-OTD LMUs must be deployed by year end. AWS currently is deploying E-OTD equipment, including both LMUs and antennas, in those markets for which it has received antenna placement specifications from its vendors. Within 30 days of the receipt of all the necessary antenna placement specifications, AWS will be able to provide the Commission with a revised deployment schedule for its pending Limited Modification Request.

Other factors could affect AWS' E-OTD deployment plans, including (1) difficulties with software and hardware stability, which caused network outages during Part 1 of AWS' FOAs that required significant manual intervention and support; (2) the need to rely on manual

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<sup>16/</sup> AWS, however, is still targeting to deploy NSS throughout its network by December 31, 2002 as stated in the Limited Modification Request. Deployment of NSS to particular PSAPs will be subject to PSAP and LEC readiness.

provisioning and maintenance tools;<sup>17/</sup> (3) a potential shortage of LMUs; and (4) time consuming LMU and antenna installations that require resolution of landlord and zoning issues.<sup>18/</sup> AWS also is concerned that technical issues regarding LEC readiness may significantly slow its deployment efforts in 2002. AWS is contacting the relevant LECs in order to determine the dates that the required interfaces to PSAPs to support Phase II E-911 will be available.

AWS and its vendors are working expeditiously to address these and other technical issues that have arisen during the FOAs. For example, to address the potential shortage of LMUs from one of its vendors, AWS proposed that the vendor activate a second production line and the vendor agreed to do so. AWS previously hired a civil engineering contractor to do site survey and site preparation work in order to expedite E-OTD deployment, and recently directed that contractor to expedite zoning and leasing. While AWS is hopeful that many of these problems can be solved over time, it does not appear that they will be resolved in time for AWS to deploy E-OTD by December 31, 2002 in response to all valid PSAP requests pending as of June 30, 2002.

**Accuracy Issues.** The most recent information that AWS has received from its vendors, based on their work during Part 1 of the FOAs, suggests that E-OTD will be capable of meeting the Commission's 100/300 meter accuracy standard without significant changes to AWS' GSM

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<sup>17/</sup> Automation is necessary before AWS can scale its deployment and maintenance efforts, but AWS' vendors have said they will not make the initial versions of automated provisioning and maintenance tools available to AWS until third quarter 2002.

<sup>18/</sup> Based on AWS' FOA experience, it can take from 10 to 60 days to resolve landlord and zoning issues, if they can be resolved at all. During Part 1 of the FOAs, landlord and zoning issues concerning antennas at three sites could not be resolved and AWS was forced to omit these sites from the trial. If AWS ultimately is unable to resolve landlord or zoning issues that arise during the deployment of E-OTD equipment, it may affect AWS' ability to meet the FCC's accuracy requirements for E911 Phase II service on its GSM network.

network. Letters that AWS received from certain of these vendors during June<sup>19/</sup> suggested that AWS may not be able to meet the second accuracy requirement set forth in the AWS GSM Waiver Order, i.e., locating callers within 50 meters for 67 percent of calls and 150 meters for 95 percent of calls by October 1, 2003,<sup>20/</sup> without significant changes to its network. Since that time, one of these vendors has expressed cautious optimism about the potential for meeting the 50/150 meter accuracy requirement, but the vendor has not provided the details of how it will accomplish this.<sup>21/</sup> All of AWS' E-OTD vendors continue to investigate measures for improving the performance of both E-OTD network equipment and handsets. While these vendors have not provided AWS with any assurances that they can identify and develop these improvements in time for AWS to deploy them by October 2003, they have promised to deliver network equipment and handsets that offer improved accuracy as soon as possible.

Until stable, large scale, optimized E-OTD networks are available, it is too early to reach conclusions about the accuracy of E-OTD systems. AWS is just beginning Part 2 of its E-OTD FOAs and additional testing will be conducted when scaled, commercial E-OTD networks are available. Based on the results of these tests, AWS expects to be able to provide the Commission with more information on the accuracy of E-OTD beginning in October 2002.

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<sup>19/</sup> See Letter from Stig Rune Johansson, Executive Vice President and General Manager, Ericsson Inc. to Greg Slemons, Executive Vice President, AT&T Wireless Services, Inc., and Rod Nelson, Executive Vice President and Chief Technology Officer, AT&T Wireless Services, Inc. (June 7, 2002) (attached hereto as Exhibit A); Letter from Tim Eckersley, Senior Vice President, Nokia, Inc. to Greg Slemons, Executive Vice President, AT&T Wireless Services, Inc. (June 14, 2002) (attached hereto as Exhibit B).

<sup>20/</sup> AWS GSM Waiver Order at ¶¶ 28-29. In its Limited Modification Request, AWS did not seek any modification of the Commission's two-stage accuracy requirements.

<sup>21/</sup> See letter from Stig Rune Johansson, Executive Vice President and General Manager, Ericsson Inc. to Greg Slemons, Executive Vice President, AT&T Wireless Services, Inc. (July 18, 2002) (attached hereto as Exhibit C).

**GSM Location Working Group.** In addition to the individual efforts AWS is making to address the deployment and accuracy issues described above, the major U.S. GSM carriers have formed a location working group (“LWG”) to share information and collaborate among themselves and with their vendors to address technical issues related to E-911 Phase II. The LWG was formed in April 2002 and includes representatives from the three national GSM carriers, VoiceStream, Cingular, and AWS, as well as Cambridge Positioning Systems. The group had two meetings, in May and June 2002, that are described in Cingular’s June 27, 2002 Supplement to Second Quarterly E911 Implementation Report.<sup>22/</sup> Cingular’s filing accurately describes the predominant theme of the vendor presentations at the second meeting, *i.e.*, that the initial 100/300 meter accuracy requirement for E-OTD can be met by the end of 2002, but that it is unclear whether the 50/150 meter accuracy requirement can be met by October 1, 2003.<sup>23/</sup>

Subsequently, the executive-level leadership of the LWG met on July 11, 2002 in Bellevue, Washington to discuss the status of E-OTD development with the major GSM infrastructure and handset vendors. Each vendor reported on the status of its E-OTD testing on carrier networks. The vendors were directed to work cooperatively to assist the carriers in meeting the Commission’s E911 Phase II location accuracy requirements.<sup>24/</sup> The carriers agreed to expedite E-OTD testing by choosing one carrier’s market as the lead test area for each radio access infrastructure provider’s technology, for both the 1900 and 850 MHz bands (*i.e.*, a Nokia 1900 MHz test area, a Nokia 850 MHz test area, an Ericsson 1900 MHz test area, etc.). This will enable the vendors to focus their expertise in a single test area, as well as provide a single test

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<sup>22/</sup> See Cingular Wireless LLC Supplement to Second Quarterly E911 Implementation Report, CC Docket No. 94-102 (filed June 27, 2002).

<sup>23/</sup> *Id.* at 4-5.

<sup>24/</sup> AWS understands that several vendor meetings at which these issues were discussed have already occurred.

area in which the handset vendors can test their equipments on the various types of infrastructure equipment.

Meetings between the U.S. GSM carriers and E-OTD vendors under the auspices of the LWG will continue and will address a multitude of issues, the cooperative resolution of which should speed E911 Phase II deployment. Issues currently being addressed by LWG subteams include network design, interoperability testing, accuracy testing, and deployment guidelines for antennas and LMUs.

### CONCLUSION

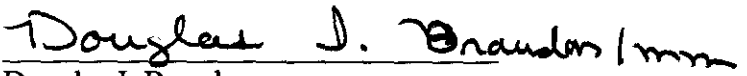
In order to satisfy its obligations under section 1.65 of the Commission's rules, 47 C.F.R. § 1.65, AWS has provided the information above regarding its inability to meet the network equipment deployment milestones that AWS offered in its Limited Modification Request or the second accuracy requirement set forth in the AWS GSM Waiver Order. AWS will make a subsequent filing as soon as it obtains more specific information on these issues.

Respectfully submitted,

AT&T WIRELESS SERVICES, INC.

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Bryan T. Bookhard  
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July 25, 2002

  
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## **CERTIFICATE OF SERVICE**

I, Michelle Mundt, hereby certify that on the 25th day of July 2002, I caused copies of the foregoing "Statement of Additional Information Under Section 1.65" to be sent to the following by either first class mail, postage pre-paid, or by hand delivery, by messenger(\*) to the following:

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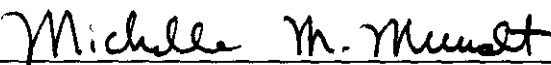
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Michelle Mundt

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# NOKIA

June 14<sup>th</sup> 2002

Greg Slemmons  
AT & T Wireless Services In  
PO Box 97061  
Redmond WA  
98073-9761

Dear Greg,

I am responding to your letter dated June 6 regarding EOTD deployment regarding the 50 meter accuracy.

Based on the US trials there is still work to be done to optimize technology for US networks. Nokia has developed an improvement plan to continue the improvement of the E-OTD accuracy, which we have shared with AWS in greater detail in the joint carrier meeting that took place in Dallas on June 11 2002.

The following are the basic activities in the plan:

- Perform deeper Error Source Analysis to determine contributions of individual E-OTD solution components to accuracy error.
- Based on the results from this analysis, prioritize and test the following enhancements:
  - Absolute Time Difference algorithm
  - Longer Averaging Times In Mobile Station
  - Improved Multipath Rejection in Mobile Station
  - Improved Multipath / Interference Rejection In LMU
  - Automatic Self-Configuration of LMU Measurement Lists
  - Coupling BTS Tx-signals with LMU Antennas
- Implement valid enhancements in commercial solution through close cooperation with Nokia Mobile Phones and operators

In addition we should point out that there are key areas that will require AWS focus, (these areas were highlighted in the meeting which took place this week) In particular, changes in network planning and changes in actual antenna configurations may be required in order to achieve the required accuracy.

Regarding the timelines you require Nokia to identify, at the time of writing it is our firm belief that during the second half of 2002 we will gain further knowledge with regard to EOTD. This will enable Nokia to provide AWS some clearer granularity with regard to the specific timelines that you may be requiring.

Nokia, Inc.  
6000 Connection Drive  
Irving, Texas 75039

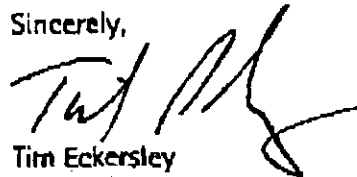
Tel. 972 994 5000  
Fax 972 994 5050

Page 2  
Greg Stemmons  
June 14, 2002

Nokia is working towards achieving the FCC requirement of 50 meter accuracy for 67% of calls by October of 2003 with the program mentioned above aimed at meeting this goal; however this program will not be without challenges. We will be reviewing the plan outlined above with AWS, and are more than willing to share as in as much detail as is currently available to Nokia at this stage.

Please don't hesitate to contact me should you have any questions or comments.

Sincerely,



Tim Eckersley  
Senior Vice President  
Customer Operations



June 7, 2002

**VIA FACSIMILE**

**Mr. Greg Slemmons**  
EVP, Wireless Network Services  
AT&T Wireless  
16331 NE 72nd Way  
Redmond, Washington 98052

**Mr. Rod Nelson**  
EVP and Chief Technology Officer  
AT&T Wireless  
7277 164th Avenue NE  
Redmond, Washington 98052

Dear Sirs,

In my June 4<sup>th</sup> letter to Greg, I indicated that we want to present to you our experience and views on the progress of implementing E-OTD as a location technology in your network and those of other operators. This information is also going to be presented to you in the joint operator meeting about E-OTD in Dallas on June 11. We further intend to present and discuss our findings in the research meeting with Rod Nelson and Mike Bamburak in Kista on Friday of next week.

Let me first confirm that our E-OTD features (including necessary hardware, software and services) is capable of achieving the FCC 2002 accuracy standard of 100 meters, 67% of the time and 300 meters, 95% of the time. This is provided that the voice/data network implements our engineering recommendations and the subscriber terminal, at a minimum, utilizes assistance data provided by the SMPC.

The location accuracy of E-OTD positioning is dependent upon three key factors:

- positioning network design and implementation,
- compatibility of the existing voice/data network with E-OTD positioning requirements,
- E-OTD equipment's (including handsets) ability to use available RF signals for positioning purposes.

The infrastructure investments that are required to meet the 2002 FCC requirements, using our E-OTD features, will vary from market to market based upon network design and market topology. Ericsson's investigations indicate that the infrastructure investment can be reduced if handsets with the most advanced positioning algorithms are used, like scanning algorithms.



As to our development roadmap for regulatory compliance towards the FCC 2003 accuracy standard of 50 meters, 67% of the time and 150 meters, 95% of the time, no data exists today that can quantify the planned improvements ability to deliver the required accuracy or the resulting additional investments that may be needed for 2003 FCC compliance.

Ericsson is fully committed to evolve the E-OTD product line including enhancements targeting performance improvements which lead to compliance with the FCC 2003 requirements. Therefore, it is imperative that a consolidated industry effort be established to move forward with meeting the FCC 2003 requirements in a cost-effective way.

Ericsson is offering to take the lead role for the vendor community in consolidating the industry effort regarding E-OTD, should this be in the best interest of AT&T Wireless.

Sincerely,

A handwritten signature in dark ink, appearing to read "Stig Rune Johansson".

Stig Rune Johansson  
Executive Vice President and General Manager  
AT&T and Affiliates KAM  
Ericsson Inc.

cc: Angel Ruiz  
Per-Arne Sandström



July 18, 2002

**VIA FACSIMILE**

Mr. Greg Slemmons  
EVP, Wireless Network Services  
AT&T Wireless  
16331 NE 72nd Way  
Redmond, Washington 98052

Dear Greg,

This is my reply to your letter from yesterday, July 17, 2002, that I received today.

As to our commitment to provide designs for AT&T Wireless GSM markets by July 1, this is our report of what has been achieved and further actions proposed.

We delivered design documentation for the requested 14 markets on plan to the level we had agreed. The following step after planning are site surveys, which are currently ongoing. Delivery from the surveys is the antenna location data, which we have provided to Bechtel and General Dynamics for approval and subsequent installation. We recognize your additional requirement to get more precise information in the format according to "RF - Design Form for LMU" and will immediately start working on providing such information. Our contact person for this work is Lester Bender, 425-895-3289, project manager for our roll-out of E-OTD equipment. He will provide you with a time-line according to which we will be able to provide the requested additional information.

In close contact with Rod Nelson and Marsha Oloh we are assessing the level of positioning accuracy that can be achieved in some selected markets using the E-OTD features available in our infrastructure. Today we still primarily have to rely on predictions of accuracy, as the networks have not yet been extended with E-OTD capabilities. Some measurements in E-OTD populated parts of networks have also been made. I am sure you know about the intense effort that is ongoing in the GSM community, including both infrastructure and handset vendors and of course the operators, to make E-OTD work satisfactory to initially meet this year's accuracy requirements. Further, a number of promising proposals have been put forward about improvements that can be implemented. We are optimistic about the prospects for the industry of being able to meet next year's accuracy requirement.

Expectation of the level of accuracy that will be achievable on an AWS market-by-market basis given current network designs and current status of handset and infrastructure must today be based on predictions. However, as a further uncertainty, the way accuracy needs to be measured and specified is not yet defined. AWS has taken the initiative to lead an effort to come to a common agreed measurement specification.

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In reply to your request, we can include the markets you propose into our plan for accuracy predictions. Presently we are doing accuracy predictions for Dallas and the Bay Area, with another four markets being discussed. Predictions require traffic data to be provided from AWS and take a fairly large work effort on our part, so output cannot be made available immediately.

Finally, I can assure you that we are doing our part of the work to make the industry successful in meeting the FCC requirements. We are leading the infrastructure vendor group and are very happy to see the other vendors joining our common effort in providing improved features in the infrastructure for us together to be able to meet the mandated requirements.

Sincerely,

A handwritten signature in dark ink, appearing to read "Stig Rune Johansson".

Stig Rune Johansson  
Executive Vice President and General Manager  
AT&T and Affiliates KAM  
Ericsson Inc.

cc: Rod Nelson  
Toby Seay  
Tage Dahlqvist  
Lester Bender